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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/086,127	02/27/2002	Susan E. Bach	091-0109	2236
27431	7590	06/01/2005	EXAMINER	
SHIMOKAJI & ASSOCIATES, P.C. 8911 RESEARCH DRIVE IRVINE, CA 92618			LU, JIA	
		ART UNIT	PAPER NUMBER	
		2634		

DATE MAILED: 06/01/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/086,127	BACH ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Jia W. Lu	2634	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 27 February 2002.  
 2a) This action is FINAL.                    2b) This action is non-final.  
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-27 is/are pending in the application.  
 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
 5) Claim(s) 9-13 is/are allowed.  
 6) Claim(s) 1-8 is/are rejected.  
 7) Claim(s) 14-27 is/are objected to.  
 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.  
 10) The drawing(s) filed on 27 February 2002 is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) All    b) Some \* c) None of:  
 1. Certified copies of the priority documents have been received.  
 2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | Paper No(s)/Mail Date. _____  |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
|   | 6) <input type="checkbox"/> Other: _____                                    |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.
2. Claims 1, 2, 7 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Vladimir Kolinko in US patent application 2002/0165002 (filed Jan. 31, 2002) in view of European patent application 276, 347 (filed Jan. 28, 1987).
  - a. Regarding claim 1, application '002 shows a communication system comprising a transmitter (figure 6, element 105) and a receiver (element 104) at the same site configured to modulate and demodulate, respectively, two sets of data (elements 110 and 111), an orthomode transducer (paragraph 30, last 5 lines), and an antenna (element 101). Application '002 teaches the use of linear or circular polarization to be used with carrier frequencies to provide polarization and frequency diversity between transmitter and receiver channels (paragraph 45, last 6 lines). Although the specific embodiment of the linear to circular polarizer is not shown, it is well known in the art. Application '347 shows one such implementation of a linear-to-circular polarizer (figure 2) that can be used with duplex systems (see abstract). It would have been obvious to one ordinarily skilled in the art to use this kind polarizer in a system described

in '002 to convert and transmit a linear polarized signal and also convert and receive a circular polarized signal in the same system in order to save space and allow for flexibility in transmission.

- b. Regarding claim 2, in addition to a first site (figure 1, station B), application '002 shows a second site (station A) with a second transmitter and receiver (elements 205 and 210) connected to a second antenna (215 and 220). The same station is described in detail in one embodiment shown in figure 6 to include a second orthomode transducer and a second linear to circular polarizer, as described above.
  - c. Regarding claims 7 and 8, '002 shows the use of two different polarizations to be horizontal (paragraph 27, line 10) and vertical (paragraph 24, lines 2).
3. Claims 3-6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Vladimir Kolinko in US patent application 2002/0165002 in view of European patent application EU 276347 as applied to claim 1 above, further in view of US patent application 2002/0167449.
- a. Regarding claim 3, although application '002 does not explicitly teach both RF carriers to be on the same frequency, application '449 teaches the use of LHCP and RHCP for incoming and outgoing signals, which are known in the art to use the same frequency. It would have been obvious to one ordinarily skilled in the art to transmit and receive on the same frequency in order to reduce complexity and manufacturing cost of circuitry.

b. Regarding claims 4-6, while application '002 does not explicitly teach the implementation of circular polarization, application '449 teaches the use of LHCP and RHCP for the transmitter and receiver of a duplex communication system (figure 7, "LHCP" and "RHCP"). It would have been obvious to one ordinarily skilled in the art to use orthogonal polarization at the incoming and outgoing signals in order to minimize cross-talk between the signals.

***Claim Objections***

4. Claims 1, 5, 6, 14-16, 18, 23 and 24 are objected to because of the following informalities:
  - a. In claim 1, line 2, claim 16, line 3 and claim 18, line 2, the first occurrence of "RF" should be properly spelled out.
  - b. In claim 5, line 2, claim 6, line 3, claim 14, line 2, claim 15, line 3, claim 23, line 3 and claim 24, line 2, the first occurrence of "LHCP" should be properly spelled out.
  - c. In claim 5, line 3, claim 6, line 2, claim 14, line 3, claim 15, line 2, claim 23, line 2 and claim 24, line 3, the first occurrence of "RHCP" should be properly spelled out.

Appropriate correction is required.

5. Claims 17, 19-22, 25-27 are objected to as being dependent upon objected base claims.

***Allowable Subject Matter***

6. Claims 9-13 are allowed. Prior art failed to show an interference detector connected to a transmit splitter and receive splitter and configured to correlate transmit singal and receive signal to determine an interference with receive signal due to transmit signal.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jia W. Lu whose telephone number is 571-272-6042. The examiner can normally be reached on Mon- Fri, 10:30AM-6:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Chin can be reached on (571)272-3056. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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Art Unit: 2634

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Jia Lu  
Examiner



STEPHEN CHIN  
SUPERVISORY PATENT EXAMINEE  
TECHNOLOGY CENTER 2800